REMARKS

Applicant is in receipt of the detailed Office Action mailed July 2, 2002. Claims 36-66 are currently pending in the application. Applicant requests reconsideration of the remaining claims in view of the following remarks.

IN THE SPECIFICATION:

The Examiner has objected to the specification as containing a description having terms that are not clear, concise or exact. Applicant has amended the specification in light of the Examiner's helpful suggestions. The Applicant has made further changes in addition to that suggested by the Examiner for further clarity.

IN THE DRAWINGS:

The Examiner has objected to the drawings and requested a proposed drawing change be filed. The Applicant has filed, concurrently herewith, corrected drawings. Applicant respectfully requests reconsideration.

35 U.S.C. §112 REJECTION

Claims 36-66 are rejected under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification. Applicant respectfully submits that the term "deep pass" is defined at the top of page 11 of the specification. For clarity, however, Applicant has amended the claims to eliminate the term deep pass. Applicant respectfully requests reconsideration.

The Examiner further rejects Claims 40, 43, 45, 55, 59, for various formalities. Applicant has amended the claims in accordance with the Examiner's helpful requests. Applicant has made additional corrections, upon review of the specification. Applicant respectfully requests reconsideration.

35 U.S.C. §102 REJECTION

Claims 36-66 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,682,333 ("Baumann"). The Examiner states that Baumann, at Column 5, line 24, discloses determining correction values for individual wheels in groups. Applicant respectfully traverses the rejection.

Baumann generally discloses a device for balancing wheel speeds with respect to a reference wheel. As disclosed in Column 2, lines 11-16, Baumann discloses providing a fine balancing technique that uses two wheels in pairs to obtain a balancing. The Examiner further points to Column 5, line 24 to support this contention.

The specification at page 2 of the present application discusses Baumann. Here, it is stated that Baumann describes determining rough-stage scaling factors during non-cornering, a predetermined minimum speed and acceleration. Subsequently, a fine-stage scaling factor is determined, wherein the wheels of one side are scaled to each other if a low driving moment exceeding a minimum speed is detected, or wheels of each axle are scaled together if a higher driving moment, moderate cornering, or minimum speed is exceeded. However, Baumann does not disclose generating scaling factors from wheels on both sides of the vehicle as well as across-axle to determine the scaling factors. Moreover, Baumann does not disclose using scaling factors from each of these groups to arrive at final scaling factors.

Amended independent Claims 36 and 55 claim respectively a method and device that includes determining scaling factors from the sides of the vehicle as well as across axle. Moreover, these pairs are used to arrive at final scaling factors. As described in the specification at page 3, line 12, the claimed invention overcomes the shortcomings of Baumann by comparing the vehicle wheel speeds in pairs to generate correction factors. Applicant respectfully submits that for the reasons set forth above, Claims 36 and 55 and all claims depending therefrom are in condition for allowance.

CONCLUSION

For at least the above reasons, Applicants respectfully submits that the present invention, as claimed, is patentable over the prior art. If the Examiner has any issues which he believes can be expedited by a telephone conference, he is encouraged to telephone the undersigned Representative.

It is believed that any additional fees due with respect to the filing of this paper should be identified in any accompanying transmittal. However, if any additional fees are required in connection with the filing of this paper that are not identified in any accompanying transmittal, permission is given to charge Deposit Account 18-0013 in the name of Rader, Fishman & Grauer PLLC.

CLAIMS AS PENDING

Attached hereto is a complete set of all claims pending in this application.

Respectfully submitted,

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MARKED UP VERSION OF THE SPECIFICATION

Please replace the paragraph beginning at page 3, line 1, with the following:

US 5,682,333 describes a method of scaling the wheel speeds for a vehicle, wherein the scaling factors for the wheels are determined to detect scaled and corrected speeds. In a first step of the this method, a rough-stage determination of scaling factors is carried out by means of fast and rough scaling, if non-cornering, a predetermined minimum speed and a low vehicle acceleration, at best, have been detected. Subsequently, a fine-stage scaling factor is determined by fine scaling, wherein either each wheel of an axle is scaled to the respective wheel on the same side of the other axle, if a low driving moment [, at best, and] exceeding of a minimum speed have been detected, or each wheel on one side is scaled to the respectively opposite wheel of the same axle, if a higher driving moment, a moderate cornering, at best, and the exceeding of a minimum speed have been detected.

Please replace the paragraph beginning at page 3, line 10, with the following:

As in state-of-the-art slip control functions, wheel speeds, frequently[,] are compared axle- or side-wise, it is important for the wheel speed values to be comparable axle-wise (at the front axle or at the rear axle) and side-wise (right-hand side, left-hand side).Virtually, this will result in the condition that all wheel speeds of the vehicle must be comparable with one another in pairs so that a corresponding set of factors of corrections is to be determined. If there is no need to precisely determine the absolute value of the wheel speeds it may be adequate to select a factor of correction (preferably a [„]"rounded" value) and to determine the values of correction for the rest of the wheels in relation thereto.

Please replace the paragraph beginning at page 3, line 23, with the following:

Preferably, individual scalings are effected for the left-hand- and right-hand-sides of the vehicle and for the vehicle axle non-actuated (or deemed <u>or identified as</u> non-actuated). After such scaling having been carried out, the complete set of correction values is determined for

all wheels of the vehicle. Scaling for one vehicle side for one vehicle axle is effected by evaluating the wheel speeds sensed for the wheels on that side and on that axle, respectively. Evaluation can be in real time (immediate processing the momentarily sensed values) or in reference to temporarily stored values.

Please replace the paragraph beginning at page 12, line 1, with the following:

Fig. 4 shows a logical circuit serving for straight travel detection. It can be integrated, for example, in the state detection 210 according to Fig. 2. Unit 401 determines the percentage speed of the wheels of an axle, preferably of the axle non-driven [(or deemed non-driven)] for which purpose the speeds of the wheels of that axle are received, i.e. signals 111a and 112a from the front axle for a vehicle with tail drive. Unit 401 can form and issue the difference, preferably the normalized difference, more preferred normalized to the lower of the two differences. The value can be signed in response to the speed ratios (V4> V3 or V3> V4). Numerals 402 and 403 designate two filters of different time constants. They receive and filter the output signal DVNA of unit 401. They are both deep pass filters. 402 has a higher time constant than filter 402, for example, a time constant higher by at least the factor 5-10. The time constant of the deep pass filter 402 can be in the range of between 10 and 100 ms. FILS (filter slow) and FILF (filter fast) are formed as output signals. These signals are evaluated in block 404. A signal 405 is generated that identifies straight travel and that can be used for generating a signal for actuating the gate circuit 221 according to Fig. 2. The slow-filtered value from filter 403 can be interpreted as "memory" for values going back to the past. If a difference results between the two filtered output values FILF and FILS, this will be indicative of dynamic steering and, hence, a non-straight travel.

MARKED UP VERSION OF ALL AMENDED CLAIMS

36. (First Amended) A method for determining correction values for [the] wheel speeds of a vehicle, comprising the step of:

determining the speeds of the vehicle wheels during travel,

evaluating the speeds of the wheels in groups, for the wheels of the non-driven axle, and for the wheels of the left-hand vehicle side and the right-hand vehicle side to obtain initial correction values based on the speeds of the wheels in the groups,

and determining correction values for the individual wheels of the vehicle [are determined] in accordance with the [results of] initial correction values obtained in the evaluation step.

39. (First Amended) A method according to claim 37, wherein the speeds of the vehicle wheels are determined during [the] a disengaged state.

40. (First Amended) A method according to claim 37, wherein the speeds of the vehicle wheels are determined during a travel state in which the driving moment or the vehicle acceleration is positive and the speed of the wheel on the axle driven [or deemed driven] is lower than the speed of the wheel on the axle non-driven [or deemed non-driven,] or during a travel state in which the driving moment or the vehicle acceleration is negative and the speed of the wheel on the axle driven [or deemed driven] is higher than the speed of the wheel on the axle non-driven [or deemed non-driven].

Determining at all speeds

42. (First Amended) A method according to claim 36, wherein the evaluation in groups of wheel speeds covers [the] ratio formation ~~or~~ difference formation or [the] pair-wise normalization of the speeds of the wheels of this group.

43. (First Amended) A method according to claim 36, wherein a correction value is selected for one wheel, [preferably the slowest wheel, and in relation thereto and] wherein in accordance with the results of evaluation, correction values are determined for the rest of the vehicle wheels.

allowable

44. (First Amended) A method according to claim [43] 36, wherein a preliminary correction value is selected for the slowest wheels on each side of the vehicle, and for the remaining wheel on each side, a preliminary correction value is determined in accordance with the slowest wheel speeds determined on that respective side.

45. (First Amended) A method according to claim 44, wherein [final] the [values of] correction values are determined from the preliminary values of correction in accordance with the wheel speeds determined on one axle.

48. (First Amended) A method according to claim 47, wherein the difference of the wheel speeds includes using a first [deep pass] filter with a first time constant and, in parallel thereto, and using a second [deep pass] filter with a second time constant exceeding the first time constant, and further including checking whether the amount of difference of the output signals of the two filters is below a threshold value.

54. (First Amended) A method according to claim 48, wherein the evaluation in groups for the wheels of one axle is continuous in that upon detection of straight driving, the output signal of the second [deep pass] filter is stored as a reference value preliminarily representing the result of the evaluation, the reference value is compared to current output signals of the second [deep pass] filter and, in case of differences, the reference value is tracked with part of the difference to the current signal value, with an acknowledgement signal used to release the stored reference value being additionally generated if the difference within a predetermined period of time was sufficiently small.

55. (First Amended) A device for determining values of correction for the wheel speeds of a vehicle, comprising:

wheel sensors for determining the speeds of [the] wheels of the vehicle during travel,

determining means for evaluating the speeds of the vehicle wheels in groups for at least one vehicle axle and at least one vehicle side to obtain initial correction values, and

means for determining the values of correction for the individual wheels of the vehicle in accordance with the [results of] initial correction values obtained during the determining step [evaluation].

59. (First Amended) A device according to claim 57, wherein state detecting means further includes detecting means for detecting [the] a disengaged state in the vehicle.

60. (First Amended) A device according to claim 56, wherein said device for evaluating, in groups, wheel speeds includes a means for forming [the] a ratio or [the] a difference or for [the] a normalization, in pairs, of the speeds of the wheels of the said group.

61. (First Amended) A device according to claim 58, wherein the detecting means for detecting the straight travel of the vehicle further includes at least one [deep pass] filter for evaluating the value of the difference between the wheel speeds of one axle.

62. (First Amended) A device according to claim 61, wherein the detecting means for detecting the straight travel further includes a first [deep pass] filter having a first time constant, and a second [deep pass] filter having a second time constant exceeding the first time constant, and a check means for checking the difference of the output signals of the two filters.

66. (First Amended) A device according to claim 62, further including means for checking the time sequence of the output signal of the second [deep pass] filter.